

Aug. 24, 1943.

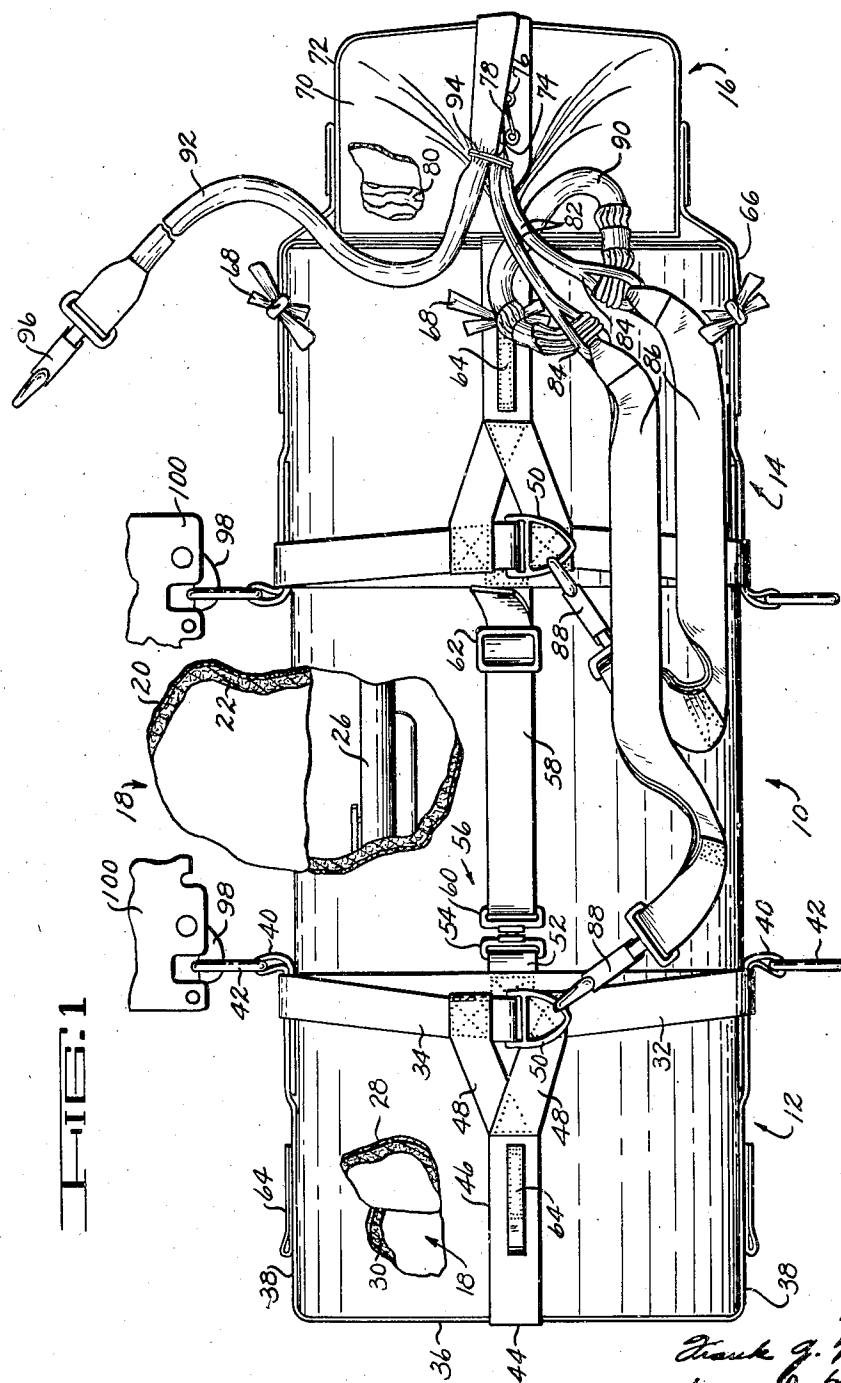
F. G. MANSON ET AL

2,327,359

AERIAL DELIVERY APPARATUS

Filed Sept. 30, 1941.

2 Sheets-Sheet 1



INVENTORS

Thank G. Mason
James J. Mackery
Elyse W. Sordberg
Eddie Kintz ~~anyway~~

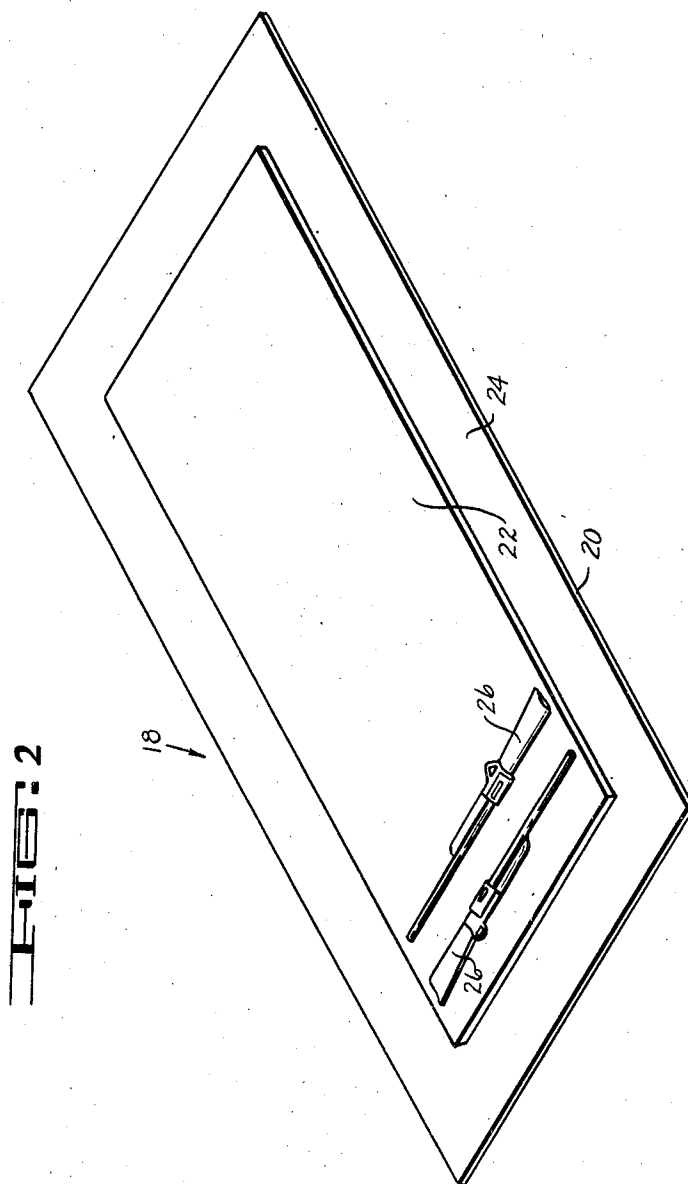
Aug. 24, 1943.

F. G. MANSON ET AL
AERIAL DELIVERY APPARATUS

2,327,359

Filed Sept. 30, 1941

2 Sheets-Sheet 2



INVENTORS
FRANK G. MANSON
JAMES J. MASKEY
BY *Edgar H. Sampson*
Wade H. H. H. ATTORNEYS

UNITED STATES PATENT OFFICE

2,327,359

AERIAL DELIVERY APPARATUS

Frank G. Manson and James J. Maskey,
Dayton, Ohio

Application September 30, 1941, Serial No. 412,976

3 Claims. (Cl. 244-137)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for Government for governmental purposes, without the payment to us of any royalty thereon.

This invention relates to improvements in aerial delivery apparatus and particularly to containers for use in conjunction with parachutes for dropping articles of a breakable nature from aircraft to the ground. The embodiment herein shown is especially useful in dropping a quantity of rifles safely.

An object of the invention is to provide a device of this type which may be opened in a minimum of time after landing.

Another object is to provide a device of this kind which will so hold the articles which are dropped as to provide maximum insurance against breakage.

Another object is to so construct the several members of the device that it will be durable and able to withstand the severe usage to which a device of this kind is necessarily subjected.

Another object is to so associate the container and the parachute pack of the device as to insure positive and safe operation at all times.

Other objects and advantages will be evident as the invention is further described. The description may be amplified by reference to the drawings, wherein

Figure 1 is a side elevation which shows the improved device assembled and supported on the hooks of the bomb release rack of an airplane ready to be dropped, part of the middle section being broken out to show the interior.

Figure 2 shows one of the elements of the device before assembly in the complete unit, the articles to be delivered being laid out thereon.

The embodiment of the invention herein shown and described comprises a middle section 10 with two telescoping end caps 12 and 14 and a parachute pack 16 attached to one of the end caps.

The middle section 10 is in the form of a roll which serves both as a housing for the articles to be dropped and as padding in which they are properly imbedded and spaced apart one from another. Before assembly, the roll 10 is in the form of a blanket 18 which is considerably longer than wide and comprises a sheet 20 of cotton duck or similar fabric and a layer 22 of heavy felt securely stitched together. The felt layer is both shorter and narrower than the duck sheet, thus leaving a margin or flap 24 of the duck, which is folded over the ends of the articles which are being wrapped.

The length of the blanket 18 is such that a pre-

determined number of articles such as the rifles 26 may be laid crosswise of the blanket with considerable space between them. The width of the felt layer 22 is preferably made substantially the same as the length of the rifles or other articles being wrapped, so that the flaps 24 may be folded over the ends of the rifles before the whole is formed into a roll. When the blanket and rifles are thus formed into a roll, the rifles will be circumferentially spaced apart between the layers of padding and will therefore be amply protected against the shock incident to landing.

The end cap 12 which slips over one end of the made-up roll 10 is in the form of a drum with one end open. The cap comprises an outer layer 28 of duck or other suitable sheet material and an inner layer 30 of heavy felt, both materials preferably being such as is used in the blanket 18.

A band 32 consisting of a plurality of layers of webbing encircles the open end of the cap and is stitched thereto. On the side away from the observer in Figure 1 all of the layers of the band 32 are stitched to the open end of the drum, while on the side facing the observer in Figure 1 part only of the layers are stitched to the drum, the remainder being left loose as at 34.

Additional reinforcing strips of webbing are stitched to the cap. One strip composed of a plurality of layers extends across the end as at 36, then axially along opposite sides of the cap as at 38, the ends being folded back upon themselves and stitched to the band 32 so as to form loops 40 for holding the stirrups 42.

Another strip also composed of a plurality of layers extends across the end as at 44, then axially along opposite sides of the cap as at 46. The one axial part 46, on the side toward the observer in Figure 1 is divided, three ways, two portions being spread as at 48 and stitched to the loose portion 34 of the band 32 with a stirrup 50 between the spread apart parts, while the third portion is extended across the inner layers of the band 32 and lapped back upon itself to form the loop 52 and stitched to the band, the loop 52 passing through the male part 54 of a quick acting coupling 56, the purpose of which will subsequently appear.

The other axial part 46, i. e., the side away from the observer in Figure 1, is extended across the band 32 to which it is stitched, then extended farther to form the long loop 58 which passes through the female part 60 of a coupling 56 and is brought back through the slip buckle 62. Loops 64 of narrower webbing are stitched to the axially

extending parts of the webbing 38, 46, for a purpose which will subsequently appear.

The end cap 14 which slips over the other end of the made-up roll 10 is exactly like the cap 12 hereinbefore described, and is provided with a different reference numeral only to facilitate description. In the assembly Figure 1, the short loop 52 is on the left end cap 12 while the long loop 58 is on the right hand cap 14, but it will be apparent that on the opposite side, the short loop 52 is on the right hand cap 14 while the long loop 58 is on the left hand cap 12, this being an obvious result of making one kind of cap which will serve both as a right and a left.

The parachute pack 16 is attached to the end cap 14 by pairs of ties 66 which are made of relatively narrow webbing and which are passed through the loops 64 and securely tied as at 68. The parachute case 70 may be made of duck or similar material with reinforcing webbing 72 and with a stiffening member in the bottom, the bottom being that side which is held against the end cap 14 by the ties 66.

The case 70 is of the purse type, being provided with a single split at 74 with grommets 76 along the edges through which a light lacing 78 passes to hold the two sides together. The canopy 80 is of simple cotton fabric design with narrow cotton webbing for shroud lines the webbing being stitched together into two groups at the lower ends 82 where they emerge from the case and provided with loops 84 for connection to the risers 86.

The risers at the lower ends are provided with spring snap fasteners 88 which are hooked into the stirrups 50. A snubber 90, built up of a plurality of cords, prevents too wide a spread between the two groups of shroud lines.

The static line 92 is tacked in several places as at 94 both to the case 70 and to the rip cord 78 and passes around the pack and into the case on the side away from the observer in Figure 1, where it is attached by a break cord to the top of the canopy 80. The upper end of the static line has a spring snap 96 for attaching it to a suitably located ring on the plane. The hooks 98 of the bomb racks 100 engage the stirrups 42 to support the assembled device until the place of delivery is reached.

Having described our invention, we claim:

1. An aerial delivery device comprising, in combination, a heavily padded rectangular fabric blanket of such size and length that when a predetermined number of the articles to be delivered are spaced apart on said blanket and wrapped, a roll of substantially a desired size will be formed, end caps of heavily padded fabric each in the form of a drum with one end open, and of a diameter to readily slip over said roll, reinforcing bands around the open ends of said caps, reinforcing strips extending from a point on a band around the end of a cap and to a point diametrically opposite on the same band, means at junctures of said bands and strips for attach-

ment to the risers of a parachute, and means at junctures of said bands and strips for support on the hooks of a bomb rack.

2. An aerial delivery device comprising, in combination, a rectangular blanket consisting of a layer of fabric stitched together with a layer of padding, the padding being of a width substantially that of the length of the articles to be delivered and the blanket being of such a length that when made into a roll with a predetermined number of the articles to be delivered interspaced between the turns, the roll will be of substantially a desired size, end caps of fabric in the form of a drum with one end closed and with a lining of padding stitched therein, made to slip freely over the ends of the roll, reinforcing bands around the open ends of the caps, a reinforcing strip extending transversely over the ends of each cap, then axially on the surface to and beyond the band, the ends being lapped back upon themselves and stitched to the band to form loops for holding stirrups for support on the hooks of a bomb rack, and a second reinforcing strip crossing the first over the end, then axially on the surface to the band to which it is stitched then beyond it to form a pair of loops for the two parts of a quick acting coupling.

3. An aerial delivery device comprising, in combination, a rectangular blanket consisting of a layer of flexible woven fabric secured together with a layer of padding, the padding being of a width substantially that of the length of the articles to be delivered, the said fabric being wider to provide flaps to turn over the ends of the said articles, and the length of the blanket being such that when closely rolled with a predetermined number of the said articles interspaced between the turns, the roll will be of substantially a desired diameter, end caps of flexible fabric in the form of a drum with one end closed and with a lining of padding secured therein, made to slip freely over the ends of said roll, reinforcing bands around the open ends of the caps, a reinforcing strip extending transversely over the end of each cap, then axially on the surface to and beyond the band, the ends being lapped back upon themselves and stitched to the band to form loops, stirrups in said loops for support on the hooks of a bomb rack, a second reinforcing strip crossing the first over the end, then axially on the surface to the band, to which it is stitched, then beyond it to form a pair of loops, one part of a quick-acting coupling in each loop, the bands and the strips being made up of a plurality of stitched-together layers, and, in the plane of the quick-acting coupling, part of the layers of the band and part of the layers of the strip being left loose from the remainder, the loose layers of the strip being spread apart and stitched to the loose layers of the band, and stirrups on the loose layers of the band between the spread ends of the strip for attachment to the risers of a parachute.

FRANK G. MANSON.
JAMES J. MASKEY.